

B<sup>1</sup>  
(concluded)

is related to Application No. 09/322,127, now U.S. Patent No. 6,307,755, issued October 23, 2001, each of which is incorporated herein by reference in its entirety.

✓ The paragraph beginning at page 14, line 5, as amended to read as follows:

B<sup>2</sup>

The structure is then encased in a capsule of injection-molded plastic (not shown) and, as shown in Fig. 6E, tie bars 107 and 109 are trimmed, yielding six leads 130A-130F connected to the source terminal of die 110 and two leads 132A and 132B connected to the gate terminal of die 110. As is evident, leads 130A-130F and 132A and 132B form structures that are symmetrical about an axis 131 of die 110. Furthermore, until the leads are trimmed from the leadframe, the leads are held stable by only the outer tie bars 107 and 109 and did not require any central tie bars which produce the torque and twisting common to the asymmetrical designs described in the above-referenced U.S. Patent No. 6,307,755.

In the Claims

Please replace Claims 4 and 8 with the following like-numbered claims and add Claims 13-30. A complete claim set is included for the Examiner's convenience.

Sub  
C<sup>2</sup>

B<sup>3</sup>

4. (Amended) A semiconductor package comprising:  
a semiconductor die having first and second principal surfaces;  
a heat sink bonded to the first principal surface of the die through a first layer of a conductive adhesive;  
a sheet metal lead spanning the second principal surface of the die, said sheet metal lead being bonded to the second principal surface of the die through a second layer of an electrically conductive adhesive; and  
a capsule encasing the die and at least a portion of the lead and the heat sink, opposite ends of the lead protruding from opposite sides of the capsule, wherein said heat sink includes a rim enclosed by said capsule.

5. The semiconductor package of Claim 4 wherein a notch is located on an underside of said rim.

6. The semiconductor package of Claim 4 wherein a plurality of holes are formed in said rim.

7. The semiconductor package of Claim 5 wherein said heat sink comprises a second notch, said second notch being enclosed by said capsule.

Sub 2

B<sup>3</sup>  
(continued)

8. (Amended) A semiconductor package comprising:  
a semiconductor die having first and second principal surfaces;  
a heat sink, at least a portion of a first surface of the heat sink being bonded to the first principal surface of the die through a first layer of a conductive adhesive;  
a sheet metal lead spanning the second principal surface of the die, said sheet metal lead being bonded to the second principal surface of the die through a second layer of an electrically conductive adhesive; and  
a nonconductive capsule encasing the die and at least a portion of the lead and the heat sink, opposite ends of the lead protruding from opposite sides of the capsule, wherein a plurality of holes are formed at the first surface of said heat sink.
9. The semiconductor package of Claim 8 wherein the plurality of holes are located in a portion of the first surface of said heat sink that is not adjacent to said die.
10. The semiconductor package of Claim 8 wherein the plurality of holes are located both in a first portion of the first surface of said heat sink that is not adjacent to said die and a second portion of the first surface of said heat sink that is adjacent to said die.
11. The semiconductor package of Claim 10 wherein said heat sink includes a rim enclosed by said capsule.
12. The semiconductor package of Claim 11 wherein a notch is located on an underside of said rim.
13. (New) The semiconductor package of Claim 4 wherein a notch is formed in a surface of said rim.
14. (New) The semiconductor package of Claim 4 wherein a bottom of said heat sink protrudes from said capsule.
15. (New) The semiconductor package of Claim 4 wherein at least one lateral edge of the heat sink is exposed.
16. (New) The semiconductor package of Claim 4 wherein said first layer comprises a material selected from the group consisting of conductive epoxy and solder.
17. (New) The semiconductor package of Claim 4 wherein said second layer comprises a material selected from the group consisting of conductive epoxy and solder.

Sub  
C2

18. (New) The semiconductor package of Claim 4 wherein said lead is symmetrical about an axis, said axis being generally perpendicular to a longitudinal dimension of said lead.

19. (New) The semiconductor package of Claim 4 wherein said die comprises a MOSFET, said sheet metal lead being in electrical contact with a source terminal of said MOSFET, said package further comprising a second sheet metal lead spanning the second principal surface of said die, said second sheet metal lead being in electrical contact with a gate terminal of said MOSFET.

20. (New) The semiconductor package of Claim 19 wherein said heat sink is in electrical contact with a drain terminal of said MOSFET.

B3  
(continued)

21. (New) A semiconductor package comprising:  
a semiconductor die having upper and lower principal surfaces;  
a metal heat sink in thermal contact with the lower principal surface of the die and in electrical contact with a first terminal on the lower principal surface of the die;  
a first sheet metal lead spanning the upper principal surface of the die, said first sheet metal lead being in electrical contact with a second terminal on the upper principal surface of the die; and  
a capsule encasing the die and at least a portion of the lead and the heat sink, opposite ends of the first sheet metal lead protruding from opposite sides of the capsule.

22. (New) The semiconductor package of Claim 21 further comprising a second sheet metal lead spanning the upper surface of the die, said second sheet metal lead being in electrical contact with a third terminal on the upper principal surface of the die.

23. (New) The semiconductor package of Claim 22 wherein said package is symmetrical about an axis, said axis being generally perpendicular to a longitudinal dimension of said sheet metal leads.

24. (New) The semiconductor package of Claim 22 wherein said die comprises a MOSFET, said first terminal comprises a drain terminal, said second terminal comprises a source terminal, and said third terminal comprises a gate terminal.

25. (New) A semiconductor package comprising a sandwich, said sandwich comprising a heat sink, a semiconductor die, and a symmetrical sheet metal lead, said heat sink being bonded to said die and said die being bonded to said lead, said lead spanning a top

Sub C2  
B3 (concluded)

surface of said die and having ends which protrude from opposite sides of said package, said sheet metal lead being symmetrical about an axis that is equidistant between the ends of the lead.

26. (New) A semiconductor packaging arrangement comprising:

a lead frame strip comprising two and only two tie bars and at least two leads, said tie bars being located at opposite edges of said strip, said at least two leads extending between said two tie bars;

first and second semiconductor dice, said first die being bonded to a first lead and said second die being bonded to said second lead.

27. (New) The semiconductor packaging arrangement of Claim 26 further comprising third and fourth leads extending between said two tie bars, said third lead being bonded to said first die, said fourth lead being bonded to said second die.

28. (New) The semiconductor packaging arrangement of Claim 27 wherein each of said first and second dice comprises a MOSFET, said first and third leads being bonded to a source and a gate terminal, respectively, of said first die, said second and fourth leads being bonded to a source and a gate terminal, respectively, of said second die.

29. (New) The semiconductor packaging arrangement of Claim 26 comprising a first heat sink bonded to said first die and a second heat sink bonded to said second die.

30. (New) The semiconductor packaging arrangement of Claim 29 comprising a capsule enclosing both of said first and second dice.